A Report to the Audit Committee

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Audit of the Metropolitan Nashville Permitting and Licensing System Upgrade – Interim Report Three

August 31, 2015

Metropolitan
Nashville
Office of
Internal Audit

EXECUTIVE SUMMARY

August 31, 2015

Why We Did This Audit

This system development life cycle audit is to ensure that controls over project management, business processes, data integrity and security are implemented before system go-live.

What We Recommended

The project team should help user departments create or improve testing plans. Testing results should lead to conclusion whether the Work Process Documents agreed upon were implemented successfully.

AUDIT OF THE METROPOLITAN NASHVILLE PERMITTING AND LICENSING SYSTEM UPGRADE – INTERIM REPORT THREE

BACKGROUND

The land management and permitting software known as KIVA is currently used by 24 agencies in the Metropolitan Nashville Government to provide Nashville citizens with services such as building permits applications, inspections, professional licensing, parcels and streets information lookup, and so forth. The fiscal year 2013 Capital Spending Plan allocated $5 million dollars to upgrade this system.

OBJECTIVES AND SCOPE

The objectives of this audit are to determine if industry practices for information system project management and application internal controls are considered and used throughout the project's system development life cycle.

This report covers the project testing phase at the time of the audit.
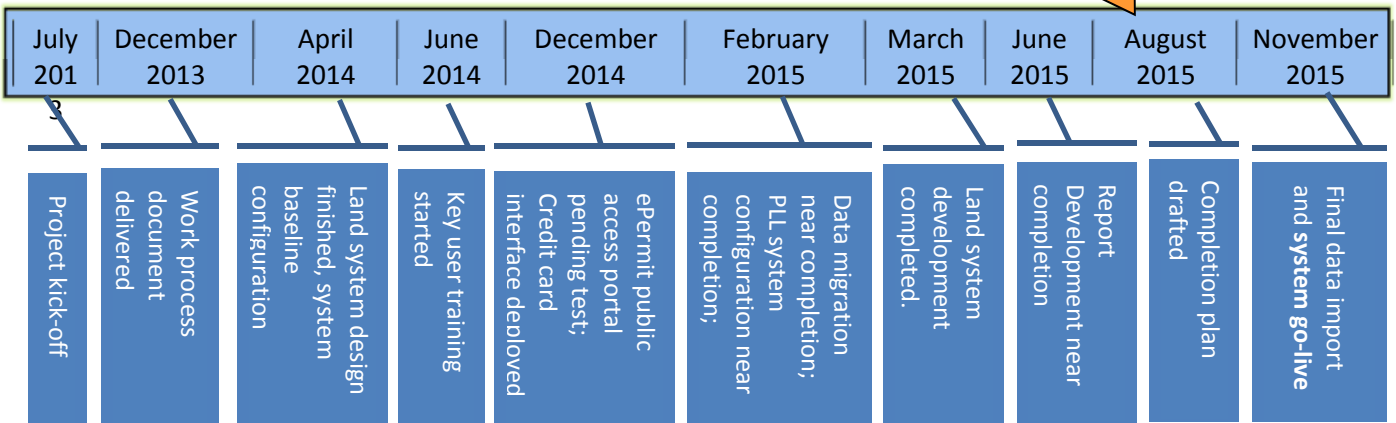
WHAT WE FOUND

As of August 17, 2015, the project go-live date was postpone three times and no fixed date was determined as this point. The delay was mainly due to the initial aggressive estimation, complexity in interfaces with other systems, and delayed development of testing plans, among other things.

The project team could help user departments to develop and/or improve testing plans to ensure that requirements in the Work Process Documents for each department were implemented successfully.

PROJECT STATUS AS OF AUGUST 17, 2015

Budget: $5 million
Estimated: $4 million
Actual: $1.1 million

July 2013	December 2013	April 2014	June 2014	December 2014	February 2015	March 2015	June 2015	August 2015	November 2015
Project kick-off	Work process document delivered	Land system design baseline configuration	Land system design finished, system configuration	Key user training started	Credit card interface deployed	ePermit public access portal pending test;	PLL system configuration near completion;	Data migration near completion;	Land system development completed.	Report Development near completion	Completion plan drafted	Final data import and **system go-live**

PROJECT MILESTONES AND COSTS

As of August 17, 2015, the project go-live date was postpone three times. The estimated go-live will be in November 2015 but no fixed date was determined as this point. The delay was mainly due to the initial aggressive estimation, complexity in interfaces with other systems, delayed development of testing plans, among other things.

Total estimated cost of the project is still under the approved $5 million, with actual payments recorded in the amount of $1.133 million.

A summary of the established milestones and current status can be viewed in Appendix A.

AUDIT OBSERVATIONS

Internal control helps entities achieve important objectives and sustain and improve performance. The Committee of Sponsoring Organizations of the Treadway Commission (*COSO*), *Internal Control – Integrated Framework*, enables organizations to effectively and efficiently develop systems of internal control that adapt to changing business and operating environment, mitigate risks to acceptable levels, and support sound decision making and governance of the organization. The audit observations listed are offered to assist management in fulfilling their internal control responsibilities.

Observation A: Formalize User Testing Plans

The project management team created a generic test plan and sent it to all user departments to be developed to fit their own testing purposes. Although each department had been testing solutions to logged issues, only six users provided a response. Review of these responses indicated that the testing plans presented could be further considered to obtain effective results.

Criteria:
- Control Objectives for Information and Related Technology, Manage Programs and Projects (BAI03 – Best Practice 7) prescribes to "Establish a test plan and required environments to test the individual and integrated solution components, including the business process owners and end users in the test team. Identify, log and prioritize errors and issues identified during testing".
- COSO, Control Activities—Principle 11—The organization selects and develops general control activities over technology to support the achievement of objectives.

Recommendation for the project management team to:
Help user departments create testing plan (scripts) to cover normal and abnormal scenarios per their work flows. Testing results should lead to conclusion whether the Work Process Documents agreed upon were implemented successfully.

GOVERNMENT AUDITING STANDARDS COMPLIANCE

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our observations and conclusions based on our audit objectives.

METHODOLOGY

To accomplish our audit objectives, we performed the following steps:

- Interviewed key stakeholders of the project, such as the Code Department, Planning Department, Water Services, Public Works, and Assessor's Office.

- Attended project status meetings.

- Reviewed and analyzed documentation for compliance with the guidelines of Project Management Body of Knowledge.

- Evaluated internal controls currently in place.

- Considered information technology risks.

AUDIT TEAM

Mark Swann, CPA, CIA, CISA, Metropolitan Auditor
Qian Yuan, CIA, CISA, In-Charge Auditor

APPENDIX A – OVERVIEW OF KEY PROJECT PHASES

Need Analysis
- June 2012: Metro Council approved five million ($5,000,000) capital spending
- July 2012: Initial Kiva replacement project kickoff
- October 2012: Departmental requirements finalized
- December 2012: Initial Accela response to upgrade request reviewed
- Metro Expenditure: $1,078.55
- Vendor Expenditure: Invoiced: $18,256   Paid: $18,256
- Cumulative Expenditure: $19,334.55   (0.39%)

Procurement Process
- April 2013: Request For Quote released
- July 2013: Civic Engineering / CityWorks awarded
- Metro Expenditure: $0
- Vendor Expenditure: Invoiced: $0   Paid: $0
- Cumulative Expenditure: $19,334.55   (0.39%)

Planning & Design
- October 2013: Project charter approval by Steering Committee
- December 2013: Department Workflow / Workshops completed
- January 2014: Implementation report document acceptance
- Metro Expenditure: $193,969
- Vendor Contract: $635,000   Invoiced: $599,383   Paid: $599,383
- Cumulative Expenditure: $890,971.26   (17.82%)

Implementation
- December 2014: Credit Card Interface acceptance - Beta version
- February 2015: Baseline PLL configuration acceptance - Beta version
- March 2015: Land System acceptance – Beta version
- April 2014: ArcGIS Desktop Extension acceptance – Beta version
- July 2015: Data Conversion acceptance (Test Pass)
- August 2015: All Interfaces completed
- August 2015: System Reports completed
- August 2015: E-Permits acceptance – Beta version
- August 2015: Electronic Plans Review acceptance – Beta version
- September 2015: e-Permit mobile
- October 2015: User acceptance testing
- Metro Expenditure: $242,147
- Vendor Contract: $1,165,000   Invoiced: $2,620   Paid: $2,620
- Cumulative Expenditure: $1,133,119 (22.66%)

> **Current Status: Delayed but on Budget**

Production
- November 2015: System Go-Live
- November 2016: Fully acceptance based on success criteria
- Metro Expenditure: $0
- Vendor Contract: Invoiced: $0   Paid: $0

Maintenance & Support
- July 2013: Year 1 maintenance, update and support
- July 2014: Year 2 maintenance, update and support
- July 2015: Year 3 maintenance, update and support
- July 2016: Year 4 maintenance, update and support
- July 2017: Year 5 maintenance, update and support
- Metro Expenditure: $0
- Vendor Contract: $849,272   Invoiced: $95,000   Paid: $95,000

APPENDIX B – MANAGEMENT RESPONSE AND CORRECTIVE ACTION PLAN

We believe that operational management is in a unique position to best understand their operations and may be able to identify more innovative and effective approaches and we encourage them to do so when providing their response to our recommendations.

Recommendations	Concurrence and Corrective Action Plan	Proposed Completion Date
The project management team should:		
A. Help user departments create testing plan (scripts) to cover normal and abnormal scenarios per their work flows. Testing results should lead to conclusion whether the Work Process Documents agreed upon were implemented successfully.	**Concur.** The Project Team has developed a "Completion Plan" for the remainder of the project which includes development of a written "Testing Plan (Scripts)" for each department and each project function. A meeting of all project participants was held on Aug. 26, 2015 to kick off the effort to formalize the Testing Plan. Drafts of the test scripts are due into ITS within 2 weeks, while we continue to execute the project according to the Completion Plan and timetable. The estimated go-live date is tentatively set for Nov. 9 2015.	October 2015.